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Confinement of 5CB Between Lyotropic Bilayers CORY DOLBASHIAN, RIZWAN MAHMOOD, Slippery Rock University, TOMMASO BELLINI, University of Milano, Italy, NOEL CLARK, University of Colorado, Boulder — We report phase behavior of mixtures of 5CB (4-Cyano-4'-Pentyl-1, 1'-biphenyl), a calamitic thermotropic liquid crystal, with mixtures of the lyotropic double tailed cationic surfactant DDAB (diodecyldimethylammonium-bromide) and water. These mixtures had a fixed ratio of DDAB to water (75% / 25%) and 5CB concentrations ranging from 10% to 85%. Our preliminary phase diagram suggests transition from isotropic to lamellar phase having higher birefringence at higher DDAB concentration. We have also observed low vale of birefringence at lower DDAB concentration suggesting swelling of bilayers.

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